

University of Maine at Machias  
Washington County  
Machias, Maine  
A-463-71-K-R/A

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**Departmental  
Findings of Fact and Order  
Air Emission License**

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

**I. REGISTRATION**

A. Introduction

University of Maine at Machias (UMM) of Machias, Maine has applied to renew their Air Emission License permitting the operation of emission sources associated with their educational facility.

B. Emission Equipment

UMM is authorized to operate the following equipment:

**Fuel Burning Equipment**

<b>Equipment Location</b>	<b><u>Equipment</u></b>	<b>Maximum Capacity (MMBtu/hr)</b>	<b>Maximum Firing Rate (gal/hr)</b>	<b>Fuel Type</b>	<b><u>Stack #</u></b>
CL Learning	CLL-1	3.12	22.3	#2 oil	CLL-S1
Torrey-Merrill	TOR-1	1.97	14.1	#2 oil	TOR-S1
Powers Hall	POW-1	2.14	15.3	#2 oil	POW-S1
Powers Hall	POW-2	2.14	15.3	#2 oil	POW-S1
Kimball Hall	KIM-1	2.1	14.9	#2 oil	KIM-S1
Kilburn	KIL-1	3.15	22.5	#2 oil	KIL-S1
Science Bldg.	SCI-1	1.82	13.0	#2 oil	SCI-S1
Science Bldg.	SCI-2	1.82	13.0	#2 oil	SCI-S1
Dorward Hall	DOR-1	1.82	13.0	#2 oil	DOR-S1
Dorward Hall	DOR-2	1.82	13.0	#2 oil	DOR-S1
Dorward Hall	DOR-3	1.82	13.0	#2 oil	DOR-S1
Facilities Sup.	FAC-1	1.90	13.6	#2 oil	FAC-S1

Sennett Hall	SEN-1*	0.53	3.8	#2 oil	SEN-S1
Sennett Hall	SEN-2*	0.53	3.8	#2 oil	SEN-S1
Sennett Hall	SEN-3*	0.77	5.5	#2 oil	SEN-S2
Sennett Hall	SEN-4*	0.77	5.5	#2 oil	SEN-S2
O'Brien House	OB-1*	0.25	1.8	#2 oil	OB-1
Childcare Center	ECEC-1*	0.25	1.8	#2 oil	ECEC-S1

\*Units SEN-1, SEN-2, SEN-3, SEN-4, OB-1 and ECEC-1 are insignificant activities as defined by Chapter 115, Appendix B of the Air Regulations and are noted for inventory purposes only.

### Electrical Generation Equipment

<u>Equipment</u>	<u>Power Rating (kW)</u>	<u>Heat Input (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type</u>
DOR-G1 Back-up Gen.	80	0.61	6.5	propane

#### C. Application Classification

The application for UMM does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of current licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 1, 2005).

## II. BEST PRACTICAL TREATMENT (BPT)

#### A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (last amended December 1, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emission from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boilers

Boilers CLL-1 and TOR-1 were installed in 1970 and 1966, respectively, with maximum design capacities of 3.12 and 1.97 MMBtu/hr. Boilers POW-1 and POW-2 were manufactured in 1973 with maximum design capacities of 2.14 MMBtu/hr each. Boilers KIM-1 and KIL-1 were manufactured in 1954 and 1987, with maximum design capacities of 2.10 and 3.15 MMBtu/hr, respectively. The two Science Building boilers, SCI-1 and SCI-2, are identical units manufactured in 1997 with design capacities of 1.82 MMBtu/hr each. Boilers DOR-1, DOR-2 and DOR-3 were manufactured in 1998, each with a heat input of 1.82 MMBtu/hr. FAC-1 was manufactured in 1992 with a design capacity of 1.90 MMBtu/hr. None of the UMM boilers are subject to EPA New Source Performance Standards (NSPS) 40 CFR Part 60 Subpart Dc, for Boilers with a heat input of 10.0 MMBtu/hr or greater and manufactured after June 9, 1989.

BPT for Boilers CLL-1, TOR-1, POW-1 and 2, KIM-1, KIL-1, SCI-1 and 2 and DOR-1, 2 and 3, and FAC-1 is the following:

1. MEDEP Chapter 106 regulates fuel sulfur content. However, the use of #2 fuel oil which meets the criteria in ASTM D396 is more stringent and shall be considered BPT.
2. MEDEP Chapter 103 regulates PM emissions for CLL-1 and KIL-1. Air Emission License A-463-71-G-R/A establishes a more stringent PM limit of 0.12 lb/MMBtu for CLL-1. A PM emission limit of 0.12 lb/MMBtu shall be considered BPT for the remainder of the boilers. PM<sub>10</sub> limits are derived from PM limits.
3. NO<sub>x</sub> emission limits based on data for boilers of similar size and age and firing #2 fuel oil.
4. CO and VOC lb/hr emission limits based on AP-42 data dated 9/98.
5. Visible emissions from each stack shall not exceed 20% opacity on a 6 minute block average basis, except for no more than one (1), six (6) minute block average in a continuous 3-hour period.

C. Back-up Generator DOR-G1

UMM operates one back-up generator that fires propane fuel.

The back-up generator is only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The back-up generator is not to be used for prime power when reliable offsite power is available.

A summary of the BPT analysis for DOR-G1 is the following:

1. 06-096 CMR 106 regulates fuel sulfur content. However, the use of propane fuel is more stringent and shall be considered BPT.
2. DOR-G1 shall be limited to 500 hr/yr of operation based on a 12 month rolling total. An hour meter shall be operated and a written log shall be kept for compliance purposes.
3. A pm limit of 0.12 lb/MMBtu shall be considered BPT. The PM<sub>10</sub> limits are derived from the PM limits.
4. Due to the lack of reliable emission factors for the firing of propane in reciprocating engines, the SO<sub>2</sub>, NO<sub>x</sub>, CO, and VOC emission limits are based upon AP-42 data dated 08/2000 for Natural Gas Fired Reciprocating Engines.
5. Visible emissions from DOR-G1 shall not exceed 10% opacity on a six (6) minute block average.

D. Annual Emission Restrictions

1. The boilers shall be restricted to firing 300,000 gallons per year of #2 fuel oil.
2. DOR-G1 shall be limited to 500 hours of operation on a 12 month rolling total.
3. DOR-G1 shall fire only propane fuel.

**Total Licensed Annual Emissions for the Facility**

**Tons/year**

(used to calculate the annual license fee)

	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>
Boilers	2.52	2.52	10.58	7.35	0.75	0.08
DOR-G1	0.02	0.02	Neg.	0.62	0.05	0.02
<b>Total TPY</b>	<b>2.54</b>	<b>2.54</b>	<b>10.58</b>	<b>7.97</b>	<b>0.80</b>	<b>0.10</b>

### III.AMBIENT AIR QUALITY ANALYSIS

According to the 06-096 CMR 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Based on the above total facility emissions, UMM is below the emissions level required for modeling and monitoring.

#### ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-463-71-K-R/A subject to the following conditions:

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

#### STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an

- extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
  - (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [06-096 CMR 115]
  - (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
  - (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]
  - (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
  - (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]
  - (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]
  - (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
    - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
    - 2. pursuant to any other requirement of this license to perform stack testing.
  - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
  - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [06-096 CMR 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
  - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
  - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.
- [06-096 CMR 115]
- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]

- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

#### **SPECIFIC CONDITIONS**

(16) **Boilers**

- A. The boilers shall be limited to 300,000 gallons per year of #2 fuel oil. Record from the supplier documenting quantity received and fuel type shall be kept for compliance purposes. [06-096 CMR 115, BPT]
- B. Emissions shall not exceed the following:

<b>Emission Unit</b>	<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>Origin and Authority</b>
CLL-1	PM	0.12	A-463-71-G-R/A
KIL-1	PM	0.12	06-096 CMR 103(2)(B)(1)(a)



C. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
CLL-1	0.37	0.37	1.57	1.09	0.11	0.01
TOR-1	0.24	0.24	0.99	0.69	0.07	0.01
POW-1	0.26	0.26	1.08	0.75	0.08	0.01
POW-2	0.26	0.26	1.08	0.75	0.08	0.01
KIM-1	0.25	0.25	1.06	0.74	0.08	0.01
KIL-1	0.38	0.38	1.59	1.10	0.11	0.01
SCI-1	0.22	0.22	0.92	0.64	0.07	0.01
SCI-2	0.22	0.22	0.92	0.64	0.07	0.01
DOR-1	0.22	0.22	0.92	0.64	0.07	0.01
DOR-2	0.22	0.22	0.92	0.64	0.07	0.01
DOR-3	0.22	0.22	0.92	0.64	0.07	0.01
FAC-1	0.23	0.23	0.96	0.67	0.07	0.01

D. Visible emissions from each boiler stack shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2), six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

(17) **DOR-G1**

- A. UMM shall limit DOR-G1 to 500 hr/yr of operation (based on a 12 month rolling total). An hour meter shall be maintained and operated on DOR-G1. [06-096 CMR 115, BPT]
- B. DOR-G1 shall only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. DOR-G1 shall not to be used for prime power when reliable offsite power is available. A log shall be maintained documenting the date, time, and reason for operation. [06-096 CMR 115, BPT]
- C. DOR-G1 shall fire only propane fuel. Compliance shall be based on fuel records from the supplier showing the type of fuel delivered. [06-096 CMR 115, BPT]

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D. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
DOR-G1	0.07	0.07	Neg.	2.49	0.19	0.07

E. Visible emissions from DOR-G1 shall not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 101]

- (18) UMM shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 MRSA §605-C).

DONE AND DATED IN AUGUSTA, MAINE THIS 25th DAY OF FEBRUARY, 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_  
DAVID P. LITTELL, COMMISSIONER

**The term of this license shall be five (5) years from the signature date above.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 3/27/2007

Date of application acceptance: 4/20/2007

Date filed with the Board of Environmental Protection: February 26, 2008

This Order prepared by Jonathan Voisine, Bureau of Air Quality.